

Description

IS31FL3730 is a LED matrix driver which features an audio modulation display mode and a general LED dot matrix display mode. The default configuration of IS31FL3730 is to drive a single 8x8 LED matrix. However, IS31FL3730 may be configured to drive either one or two 8x8, 7x9, 6x10, or 5x11 dot matrix display(s). The intensity of any matrix picture can be modulated by an audio signal.

In the general purpose mode, the ON or OFF condition of each individual LED in the display matrix is programmed via an I2C interface.

Features

- 2.7V to 5.5V supply
- I2C interface, automatic address increment function
- One-time programming, internal scan
- Audio modulated display intensity with digitally programmable input gain
- Internal registers to digitally adjust display intensity
- Modulate LED brightness with 128 different items in PWM
- One address pin with 4 logic levels to allow four I2C slave addresses
- QFN-24 (4mm x 4mm) package

Quick Start



Figure 1: Photo of IS31FL3730 Evaluation Board

Evaluation Board Ordering Information

Part No.	IC Package
IS31FL3730-QFLS2-EB	QFN-20, Lead-free

Table 1: Ordering Information

For pricing, delivery, and ordering information, please contact ISSI's analog marketing team at analog_mkt@issi.com or (408) 969-6600.

Evaluation Board Operation

The IS31FL3730 evaluation board has six display modes. Press MODE button to switch configurations.

- 1) (Default Mode) A little man is dancing and change postures according to music rhythm.
- 2) Display Chinese characters '赵, 钱, 孙, 李', etc one by one, then move to left to display more characters.
- 3) Display Hart shape, Butterfly, Lock, Little Man, etc graphics with breathing dimming effect.
- 4) Flying butterfly.
- 5) Hart shape animation.
- 6) Combined shapes animation.

***Note:**

IS31FL3730 solely controls the FxLED function on the evaluation board.

Software Control

JP1 default setting is close circuit. If it is set to open, the on-board MCU will stop working. The I2C pins are set to High Impedance. External I2C signals can be connected to TP3 to control the IS31FL3730 LED driver.

Please refer to the datasheet to get more information about IS31FL3730.

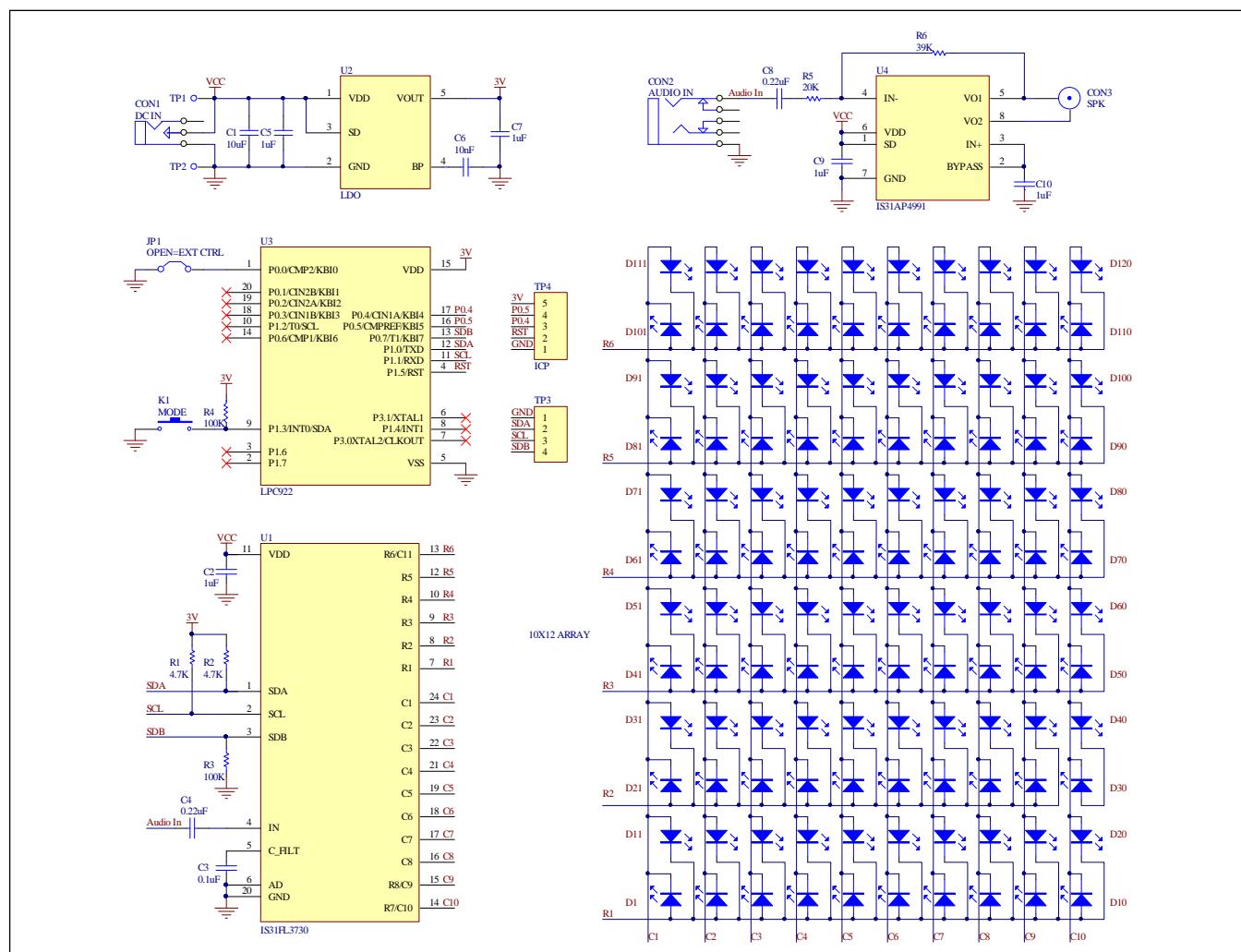


Figure 2:IS31FL3730 Application Schematic

Bill of Materials

Name	Symbol	Description	Qty	Supplier	Part No.
LED Driver	U1	Array FxLED Driver	1	ISSI	IS31FL3730
LDO	U2	Low-dropout Regulator	1	PAM	PAM3101
MCU	U3	Microcontroller	1	NXP	LPC922
Audio Amplifier	U4	Class-AB Audio Amplifier	1	ISSI	IS31AP4991
Diodes	D1~D120	Diode, LED Blue, SMD	120	Everlight	19-217/BHC-ZL 1M2RY/3T
Resistors	R1,R2	RES,4.7k,1/16W,±5%,SMD	2		
Resistors	R3,R4	RES,100k,1/16W,±5%,SMD	2		
Resistor	R5	RES,20k,1/16W,±5%,SMD	1		
Resistor	R6	RES,39k,1/16W,±5%,SMD	1		
Capacitor	C1	CAP,10µF,16V,±20%,SMD	1		
Capacitors	C2,C5,C7,C9, C10	CAP, 1µF,16V,±20%,SMD	5		
Capacitor	C3	CAP, 0.1µF,16V,±20%,SMD	1		
Capacitors	C4,C8	CAP, 0.22µF,16V,±20%,SMD	2		
Capacitor	C6	CAP,10nF,16V,±20%,SMD	1		
Button	K1	Button SMD	1		

Table 2: Bill of Materials, refer to Figure 2 above.

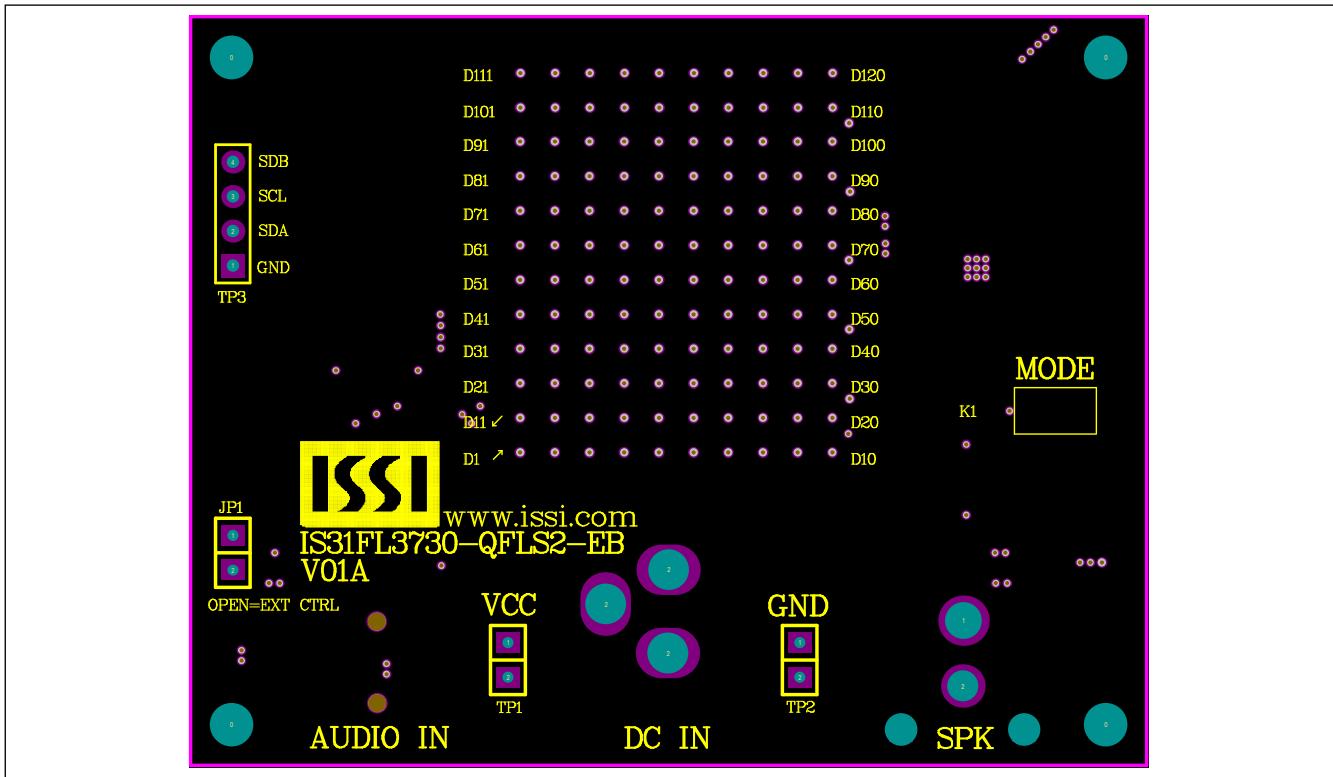


Figure 3: Board Component Placement Guide -Top Layer

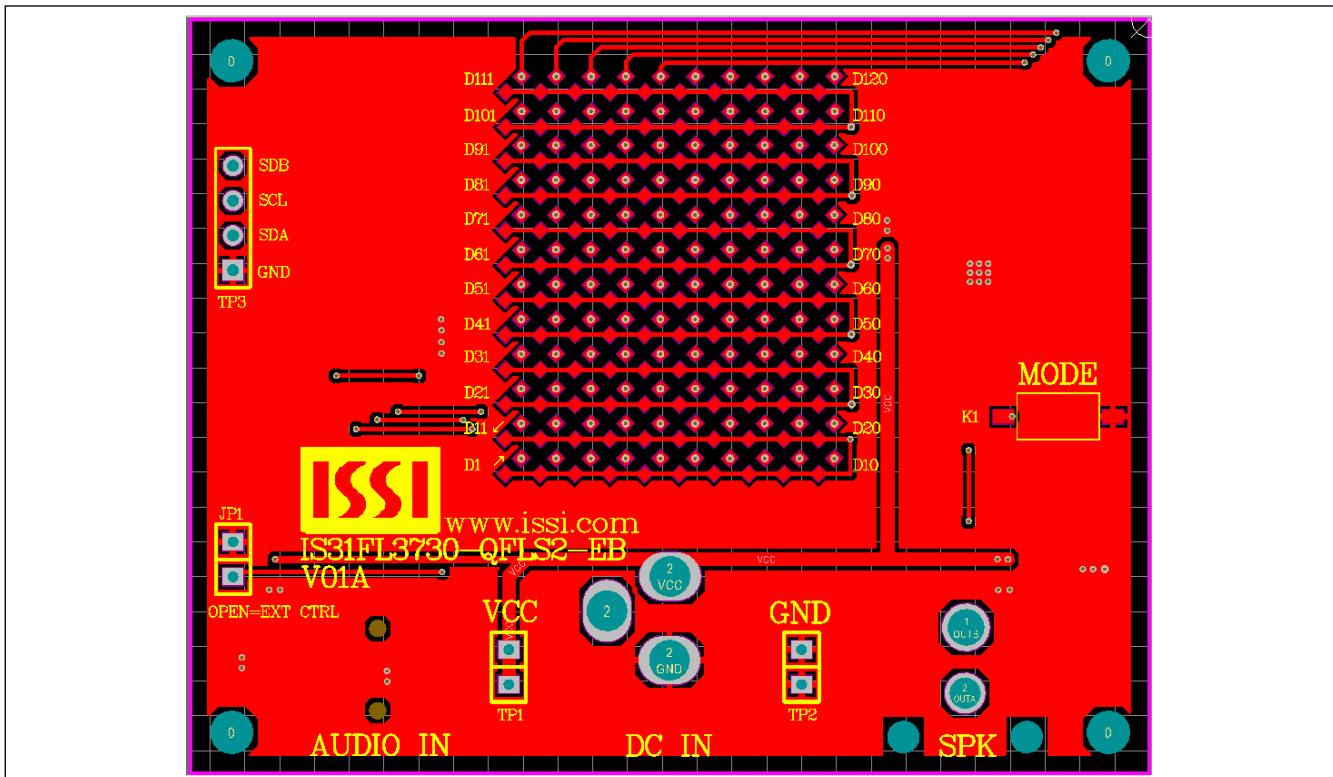


Figure 4: Board PCB Layout- Top Layer

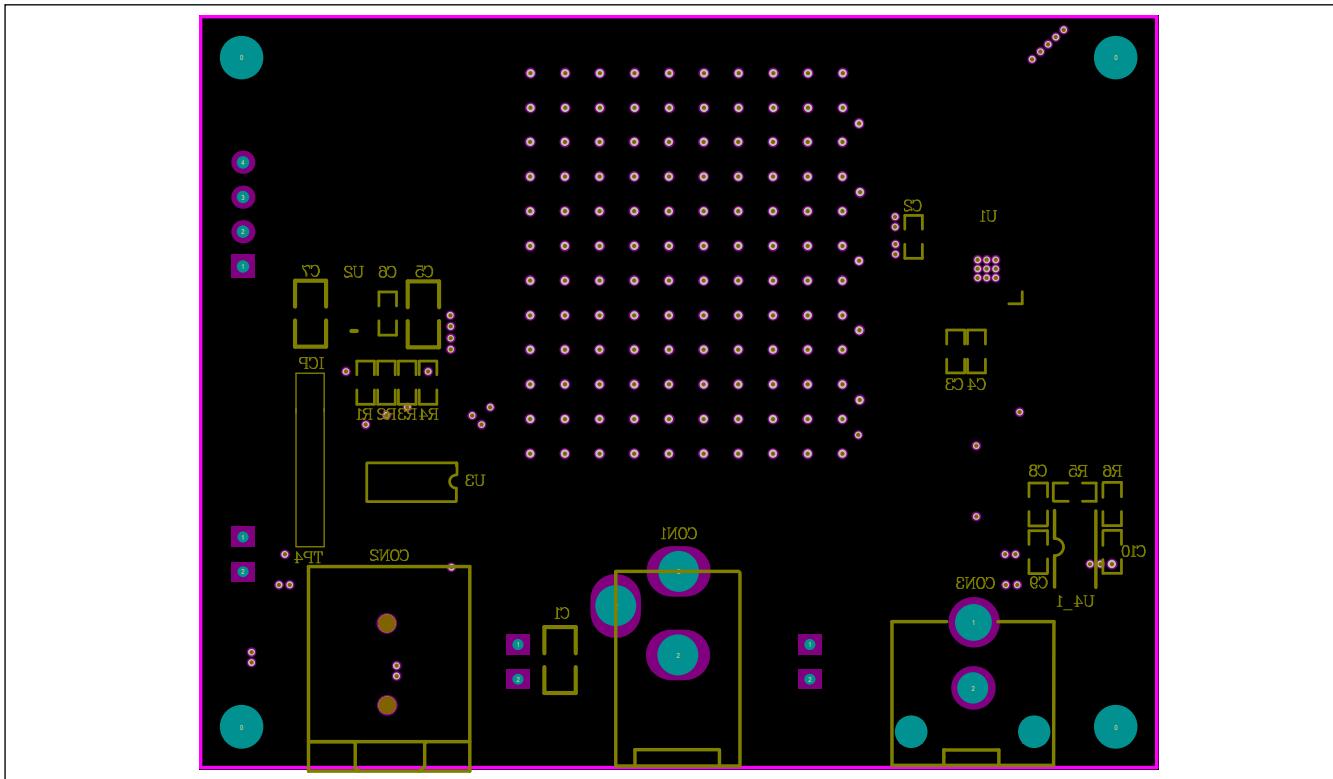


Figure 5: Board Component Placement Guide -Bottom Layer

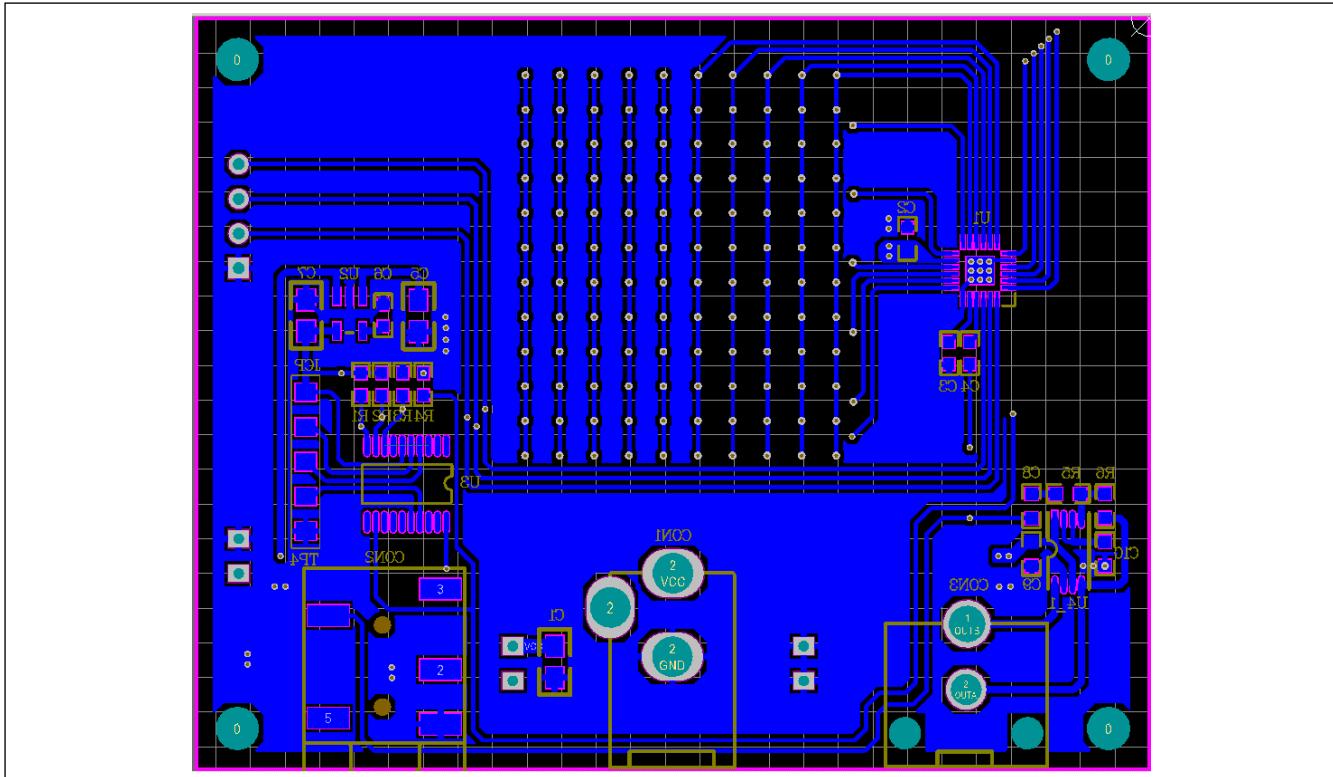


Figure 6: Board PCB Layout-Bottom Layer

Copyright © 2011 Integrated Silicon Solution, Inc. All rights reserved. ISSI reserves the right to make changes to this specification and its products at any time without notice. ISSI assumes no liability arising out of the application or use of any information, products or services described herein. Customers are advised to obtain the latest version of this device specification before relying on any published information and before placing orders for products.

Integrated Silicon Solution, Inc. does not recommend the use of any of its products in life support applications where the failure or malfunction of the product can reasonably be expected to cause failure of the life support system or to significantly affect its safety or effectiveness. Products are not authorized for use in such applications unless Integrated Silicon Solution, Inc. receives written assurance to its satisfaction, that:

- a.) the risk of injury or damage has been minimized;
- b.) the user assume all such risks; and
- c.) potential liability of Integrated Silicon Solution, Inc is adequately protected under the circumstances

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

ISSI:

[IS31FL3730-QFLS2-EB](#)